



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,012	09/26/2000	TAKAFUMI NAKA	107456	4684
25944	7590	04/21/2004	EXAMINER	
OLIFF & BERRIDGE, PLC			THOMPSON, JAMES A	
P.O. BOX 19928			ART UNIT	
ALEXANDRIA, VA 22320			PAPER NUMBER	

2624

DATE MAILED: 04/21/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/670,012

Applicant(s)

NAKA, TAKAFUMI

Examiner

James A Thompson

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The drawings are objected to because figures 1(a)-(c) and figures 4(a)-(c) fail to label both axes of the graphs contained in said figures. It is therefore not obvious what the voltage, which is plotted on one axis of each graph, is being plotted against. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:  
It is replete with spelling and grammatical errors. Some examples include:  
On page 3, line 10, "can matches" should be replaced with "matches".  
On page 4, line 21, "determination falls white color" should be altered to make the sentence comprehensible.

Other spelling and grammatical errors are contained in the specification and the applicant is advised to correct these errors.

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: On page 4, line 10, reference is made to Fig. 5(c) which does not exist. Said figure reference should be corrected to refer to the intended figure.

Appropriate correction is required.

### ***Claim Objections***

5. Claim 9 is objected to because of the following informalities:

On page 24, line 14, claim 9 states "in confrontation with at one of the roller members." The passage should either say "in confrontation with one of the roller members" or "in confrontation with at least one of the roller members," whichever is meant by applicant.

Appropriate correction is required.

### ***Claim Rejections – 35 USC §102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama (US Patent 5,796,865).

Claim 1 discloses an image reading device. Claim 10 discloses a method for formulating a level of an image signal. The device of claim 1 performs the steps of the method of claim 10. Claims 1 and 10 are therefore discussed together.

**Regarding claims 1 and 10:** Aoyama discloses an image reading device (figure 2 and figure 3 of Aoyama). Figure 1 is the image gradation correction apparatus, which is part of the image processing unit (figure 3(28) of Aoyama) of the image read-out apparatus (figure 3 of Aoyama) (column 9, lines 24-31 of Aoyama). Figure 2 is an image recording apparatus (column 8, lines 26-27 of Aoyama), which is a part of the overall embodiment of the invention taught by Aoyama (column 8, lines 23-27 of Aoyama).

Said image reading device comprises an image reading unit (figure 2 of Aoyama) comprising a plurality of optical reading sensors aligned in a row (column 8, lines 32-35 of Aoyama). The optical sensors are a sheet of stimuable phosphors (figure 2(14) and column 8, lines 32-35 of Aoyama). A plurality of optical reading sensors (stimuable phosphors) are aligned along each row of said sheet in order to form said sheet. Said image reading unit outputs an image signal based on an image read by the plurality of optical reading sensors (column 8, lines 61-65 of Aoyama).

Said image reading device further comprises a characteristic storage unit (figure 1(1,2) of Aoyama) that stores the characteristic of said image reading unit in the form of a reference image signal level curve (column 7, lines 35-40 of Aoyama) and one of a predetermined coefficient and a threshold level curve (column 7, lines 45-54 of Aoyama), the reference image signal level curve being obtained by correcting an image

Art Unit: 2624

signal curve outputted by said reading unit when the optical reading sensors reads an image of a predetermined white reference member at a factory so that a peak value of the image signal curve matches a predetermined maximum readable range (column 7, lines 46-49 of Aoyama), and the threshold level curve being obtained by multiplying the reference image signal level curve by the predetermined coefficient (column 7, lines 49-54 of Aoyama). A fundamental gradation curve is stored in the gradation curve storage means (figure 1(1) of Aoyama) (column 7, lines 35-38 of Aoyama). Said fundamental gradation curve relates the output density value with the input image signal value (column 9, lines 34-42 of Aoyama). Relating the density value and the input image signal inherently creates an image signal level curve. Said image signal level curve is a reference image signal level curve since the fundamental gradation curve is used as a reference curve. The enlargement and reduction means (figure 1(2) of Aoyama) uses a factor to enlarge the fundamental gradation curve (column 7, lines 46-54 of Aoyama), thus creating what is essentially the threshold level curve. The fundamental gradation curves, since they serve as a reference for the device (column 7, lines 38-39 of Aoyama), would inherently be set when the device is produced since they are simply stored on the device and used (column 7, lines 35-39 of Aoyama). The reference gradation curves are not created by user operation of the device. The fundamental gradation curve storage means (figure 1(1) of Aoyama) and the enlargement and reduction means (figure 1(2) of Aoyama) comprise a characteristic storage unit since they are simply the means by which said unit functions.

Said image reading device further comprises a correction coefficient calculator (figure 1(5) of Aoyama) that determines a correction coefficient (column 8, lines 6-11 of Aoyama) which provides a part of the present image signal level curve being matched with a part of the reference signal level curve to produce a corrected image signal level curve (column 8, lines 16-19 of Aoyama).

Said image reading device further comprises a correction output unit (figure 3(30) of Aoyama) that produces a binary output signal of the corrected image signal level curve by comparing the corrected image signal level curve with either the threshold level curve stored in said characteristic storage unit or a threshold level curve obtained by multiplying the reference image signal level curve by the predetermined coefficient (column 12, lines 17-24 of Aoyama). After the gradation curve has been processed, the image can be output using a laser printer (column 12, lines 17-24 of Aoyama). This would inherently require some form of halftoning since halftoning is the manner in which laser printers obtain an output signal. Halftoning inherently involves some form of comparison with a threshold level.

**Regarding claim 13:** Aoyama discloses that the image reading unit (figure 2 of Aoyama) comprises a plurality of optical reading sensors aligned in a row (column 8, lines 32-35 of Aoyama). The optical sensors are a sheet of stimuable phosphors (figure 2(14) and column 8, lines 32-35 of Aoyama). A plurality of optical reading sensors (stimuable phosphors) are aligned along each row of said sheet in order to form said sheet. Said image reading unit outputs an image signal based on an image read by the plurality of optical reading sensors (column 8, lines 61-65 of Aoyama).

***Claim Rejections – 35 USC §103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (US Patent 5,796,865) in view of Lazzouni (US Patent 5,652,412).

Claims 2, 6 and 11 further limit claims 1, 5 and 10, respectively. Claims 2, 6 and 11 disclose essentially the same limitations. Claims 2, 6 and 11 are therefore discussed together.

Claims 3, 7 and 12 further limit claims 1, 5 and 10, respectively. Claims 3, 7 and 12 disclose essentially the same limitations. Claims 3, 7 and 12 are therefore discussed together.

Claims 4 and 8 further limit claims 1 and 5, respectively. Claims 4 and 8 disclose essentially the same limitations. Claims 4 and 8 are therefore discussed together.

**Regarding claim 5:** Claim 1 contains most of the elements of claim 5. Therefore, the arguments regarding claim 1 are incorporated herein. Aoyama further discloses printing means (figure 3(30) of Aoyama) that prints an image on an image recording medium based on the binary output signal (column 12, lines 21-24 of Aoyama).

Aoyama does not disclose expressly a white board on which an image is drawn.

Lazzouni discloses a white board (figure 1(14) of Lazzouni) on which an image is drawn (column 6, lines 35-40 of Lazzouni).

Aoyama and Lazzouni are combinable because they are from the same field of endeavor, namely digital image control and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the writing instrument, which inputs on the encoded writing medium (figure 1(14) of Lazzouni), as the input device instead of the image input device (figure 2 of Aoyama) specifically shown in Aoyama. The motivation for doing so would have been to have the capability of making a digital image via freehand drawings (column 2, lines 39-41 of Lazzouni). Therefore, it would have been obvious to combine Lazzouni with Aoyama to obtain the invention as specified in claim 5.

**Regarding claims 2, 6 and 11:** Aoyama discloses that the correction coefficient calculator (figure 1(5) of Aoyama) comprises comparing means (figure 1(5) of Aoyama) that compares the present image signal level curve with the reference image signal level curve stored in the characteristic storage unit (figure 4; figure 8; and column 10, lines 41-50 of Aoyama). A desired gradation curve is obtained by correcting the fundamental gradation curve (figure 4 and column 9, lines 43-45 of Aoyama). The fundamental gradation curve is first enlarged or reduced (column 9, lines 46-47 and lines 55-57 of Aoyama). The resultant curve is used in a comparison with the desired curve and corrected to obtain said desired curve (column 10, lines 41-50 of Aoyama).

Said correction coefficient calculator further comprises determining means (figure 1(5) of Aoyama) that determines a correction coefficient required to match at least the portion of the present image signal level curve with the portion of the reference signal level curve (figure 8 and column 10, lines 41-50 of Aoyama).

Aoyama does not disclose expressly that said correction coefficient calculator further comprises reading means that reads an image from a white reference surface provided at a reading position to obtain a present image signal level curve before image data is actually retrieved using the reading unit.

Lazzouni discloses reading means (figure 3(50-70) of Lazzouni) that reads an image from a white reference surface (figure 3(14) of Lazzouni) (column 5, lines 34-42 of Lazzouni) provided at a reading position to obtain a present image signal level curve before image data is actually retrieved (column 6, lines 2-7 and lines 35-40 of Lazzouni). The reading means (figure 3(50-70) of Lazzouni) of the pen (figure 3(10) of Lazzouni) reads pixel patterns before the pen writes in order to determine a relative position (column 6, lines 2-7 of Lazzouni). This allows a continuous record of the pen's path to be kept so that the created image can be stored (column 6, lines 35-40 of Lazzouni).

Aoyama and Lazzouni are combinable because they are from the same field of endeavor, namely digital image control and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use reading means of the pen as part of the correction coefficient calculator so that said correction coefficient calculator can read an image from the white reference surface, also taught by Lazzouni,

provided at a reading position to obtain a present image signal level curve before image data is actually retrieved using the reading unit. The motivation for doing so would have been to verify the position of the reading elements and verify the pixel patterns at said position (column 6, lines 2-7 of Lazzouni). Therefore, it would have been obvious to combine Lazzouni with Aoyama to obtain the invention as specified in claims 2, 6 and 11.

**Regarding claim 3, 7 and 12:** Aoyama discloses that said correction output unit comprises outputting means (figure 3(30) of Aoyama) that outputs a corrected image signal level curve (column 12, lines 17-24 of Aoyama) by multiplying the correction coefficient (weighting factor) by the present signal level curve (figures 8-10 and column 11, lines 13-17 of Aoyama).

**Regarding claims 4 and 8:** Aoyama discloses using a plurality of optical image sensors (figure 2(14); and column 8, lines 32-35 and lines 61-65 of Aoyama).

Aoyama does not disclose expressly that said optical image sensors comprise contact image sensors.

Lazzouni discloses optical image sensors (figure 3(70) of Lazzouni) that comprise contact image sensors (column 5, lines 49-56 of Lazzouni). A detector array (figure 3(70) of Lazzouni) is used to detect the absolute and relative position of the pen (column 5, lines 49-56 of Lazzouni) as the pen writes (column 5, lines 57-63 of Lazzouni).

Aoyama and Lazzouni are combinable because they are from the same field of endeavor, namely digital image control and processing. At the time of the invention, it

would have been obvious to a person of ordinary skill in the art to use the writing instrument as disclosed by Lazzouni as the image input device instead of the image input device (figure 2 of Aoyama) specifically shown in Aoyama. The motivation for doing so would have been to have the capability of making a digital image via freehand drawings (column 2, lines 39-41 of Lazzouni). Therefore, it would have been obvious to combine Lazzouni with Aoyama to obtain the invention as specified in claims 4 and 8.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (US Patent 5,796,865) in view of Lazzouni (US Patent 5,652,412) and Komagine (US Patent 5,479,585).

**Regarding claim 9:** Aoyama discloses outputting an image (column 12, lines 17-24 of Aoyama).

Aoyama does not disclose expressly that the white board comprises an endless white sheet on which the image is to be drawn; a pair of roller members rotatable about their axes for supporting and feeding the endless white sheet, the endless white sheet being mounted on the pair of roller members; and a drive motor drivingly connected to at least one of the roller members, the image reading unit being positioned in confrontation with at one of the roller members.

Lazzouni discloses using a white board comprising a white sheet (figure 3(14) of Lazzouni) on which an image is to be drawn (column 6, lines 35-42 of Lazzouni).

Aoyama and Lazzouni are combinable because they are from the same field of endeavor, namely digital image control and processing. At the time of the invention, it

would have been obvious to a person of ordinary skill in the art to use the electronic pen and encoded white sheet, as taught by Lazzouni, as an input device for the apparatus taught by Aoyama. The motivation for doing so would have been to have the capability of making a digital image via freehand drawings (column 2, lines 39-41 of Lazzouni). Therefore, it would have been obvious to combine Lazzouni with Aoyama.

Aoyama in view of Lazzouni does not disclose expressly that said white sheet is an endless white sheet and the white board further comprises a pair of roller members rotatable about their axes for supporting and feeding the endless white sheet, the endless white sheet being mounted on the pair of roller members; and a drive motor drivingly connected to at least one of the roller members, the image reading unit being positioned in confrontation with at one of the roller members.

Komagine discloses that said white sheet is an endless white sheet (figure 1(64) and column 2, line 65 to column 3, line 4 of Komagine) and the white board further comprises a pair of roller members (figure 1(42,44) of Komagine) rotatable about their axes for supporting and feeding the endless white sheet (column 2, lines 21-25 of Komagine), the endless white sheet being mounted on the pair of roller members (figure 1 and column 2, lines 50-53 of Komagine); and a drive motor (figure 1(20) of Komagine) drivingly connected to at least one of the roller members (column 2, lines 6-9 of Komagine), an image writing unit (figure 1(48,50) of Komagine) being positioned in confrontation with at least one of the roller members (column 2, lines 31-34 of Komagine).

Aoyama in view of Lazzouni is combinable with Komagine because they are from the same field of endeavor, namely digital image control and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the device (figure 1 of Komagine) of Komagine to supply the encoded white sheet for the apparatus of Aoyama in view of Lazzouni. Instead of the image writing unit of Komagine, the image reading unit of Aoyama in view of Lazzouni would be positioned in confrontation with at least one of the roller members. The motivation for doing so would have been to provide an endless amount of the encoded sheet for whatever size is needed for the image (column 1, lines 38-43 of Komagine). Therefore, it would have been obvious to combine Komagine with Aoyama in view of Lazzouni to obtain the invention as specified in claim 9.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jack Hohner, US Patent 4,991,116, February 5, 1991.

Tsukamoto et al., US Patent 6,115,136, September 5, 2000.

Nakamura et al., US Patent 6,115,150, September 5, 2000.

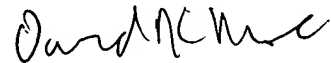
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 703-305-6329. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson  
Examiner  
Art Unit 2624

JAT  
April 15, 2004



**DAVID MOORE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**